ORDER NO. HAD8606550A2

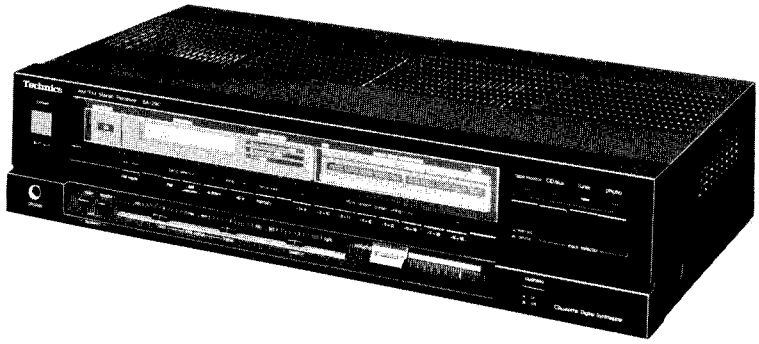
Service Manual

Receiver

QUARTZ Synthesizer AM/FM Stereo Receiver

SA-290

SA-290



Color

(K)...Black Type
(S)...Silver Type

Color	Area
(K) (S)	[EGB]...F.R Germany.

- Please use this manual together with the service manual for model No. SA-290/SA-290L (original), Order No. HAD8602344C8.
- For parts lists, schematic diagram, printed circuit boards and exploded views, refer to the ones in this Service Manual.
- For other information, refer to both this Service Manual and the original Service Manual.

TECHNISCHE DATEN

(DIN 45 500)

■ VERSTÄRKERTEIL

Dauerton-Ausgangsleistung bei 1 kHz	
beide Kanäle ausgesteuert	2 × 50W (8 Ω)
Gesamtklirrfaktor	
halbe Nennleistung bei 1 kHz	0,02% (8 Ω)
Intermodulationsfaktor	
Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω	0,5%
Leistungsbandbreite	
beide Kanäle ausgesteuert bei −3 dB	10 Hz ~ 40 kHz (8 Ω)
Dämpfungsfaktor	20 (8 Ω)
Eingangsempfindlichkeit und -impedanz	
Phono	2,5 mV/47 kΩ
CD/AUX,TAPE/EXT	150 mV/22 kΩ
Maximale TA-Eingangsspannung (1 kHz, eff.)	150 mV
Geräuschspannungsabstand	
Nennleistung (8 Ω)	
Phono	70 dB (nach IHF, A: 72 dB)
CD/AUX,TAPE/EXT	88 dB (nach IHF, A: 95 dB)
Frequenzgang	
Phono	RIAA-Standardkurve, ±0,8 dB (30 Hz ~ 15 kHz)
CD/AUX,TAPE/EXT	10 Hz ~ 70 kHz(−3 dB)
Klangregler	
Baßregler (BASS)	50 Hz, +10 dB ~ −10 dB
Höhenregler (TREBLE)	20 kHz, +10 dB ~ −10 dB
Gehörrichtige Lautstärkekorrektur (Loudness)	
(bei −30 dB Ausgangsleistung)	50 Hz, +9 dB
Ausgangsspannung	
Aufnahmeausgang (REC OUT)	150 mV
Kanalabweichung (250 Hz ~ 6300 Hz)	±1 dB
Übersprechdämpfung (1 kHz)	55 dB
Kopfhörerpegel und -impedanz	470 mV/330 Ω
Lautsprecherimpedanz	
MAIN oder REMOTE	4 Ω ~ 16 Ω
MAIN und REMOTE	8 Ω ~ 16 Ω

■ UKW-TUNERTEIL

Wellenbereich	87,50 ~ 108,00 MHz
Eingangsempfindlichkeit	
S/R 30 dB	1,5 μV (75 Ω)
S/R 26 dB	1,3 μV (75 Ω)
S/R 20 dB	1,2 μV (75 Ω)
Nutzempfindlichkeit nach IHF	1,5 μV (nach IHF '58, 75 Ω)
Stereoumschaltschwelle bei 46 dB nach IHF	22 μV/75 Ω
Gesamtklirrfaktor	
Mono	0,15%
Stereo	0,3%
Geräuschabstand	
Mono	60 dB (75 dB nach IHF)
Stereo	58 dB (71 dB nach IHF)
Frequenzgang	20 Hz ~ 15 kHz (+1 dB ~ −2 dB)
Trennschärfe bei Störsender	±400 kHz, 65 dB
Einfangverhältnis	1,0 dB
Spiegelfrequenz-Dämpfung bei 98 MHz	40 dB
ZF-Dämpfung bei 98 MHz	70 dB

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Ansprechdämpfung auf Nebenfrequenzen bei 98 MHz	70 dB
MW-Unterdrückung	50 dB
Übersprechdämpfung	
1 kHz	40 dB
10 kHz	30 dB
Trägerrest	
19 kHz	−30 dB (−35 dB nach IHF)
38 kHz	−45 dB (−50 dB nach IHF)
Kanalabweichung (250 Hz ~ 6300 Hz)	±1,5 dB
Begrenzereinsatz	1,2 μV
Bandbreite	
ZF-Verstärker	180 kHz
UKW-Demodulator	1000 kHz
Antennenanschluß	75 Ω (unsymmetrisch)

■ MW-TUNERTEIL

Wellenbereiche	522 ~ 1611 kHz (9-kHz-Schritte) 530 ~ 1620 kHz (10-kHz-Schritte)

Eingangsempfindlichkeit (S/R 20 dB)	20 μV, 330 μV/m
Trennschärfe	55 dB
Spiegelfrequenz-Dämpfung	40 dB
ZF-Dämpfung	55 dB

■ ALLGEMEINE DATEN

Leistungsaufnahme	270 W
Netzspannung	
Für Kontinentaleuropa	Wechselstrom 50 Hz/60 Hz, 220V
Abmessungen (B×H×T)	430 × 97 × 243 mm
Gewicht	5,3 kg

(Die technischen Daten können infolge von Verbesserungen ohne Ankündigung geändert werden.)

■ REPLACEMENT PARTS LIST

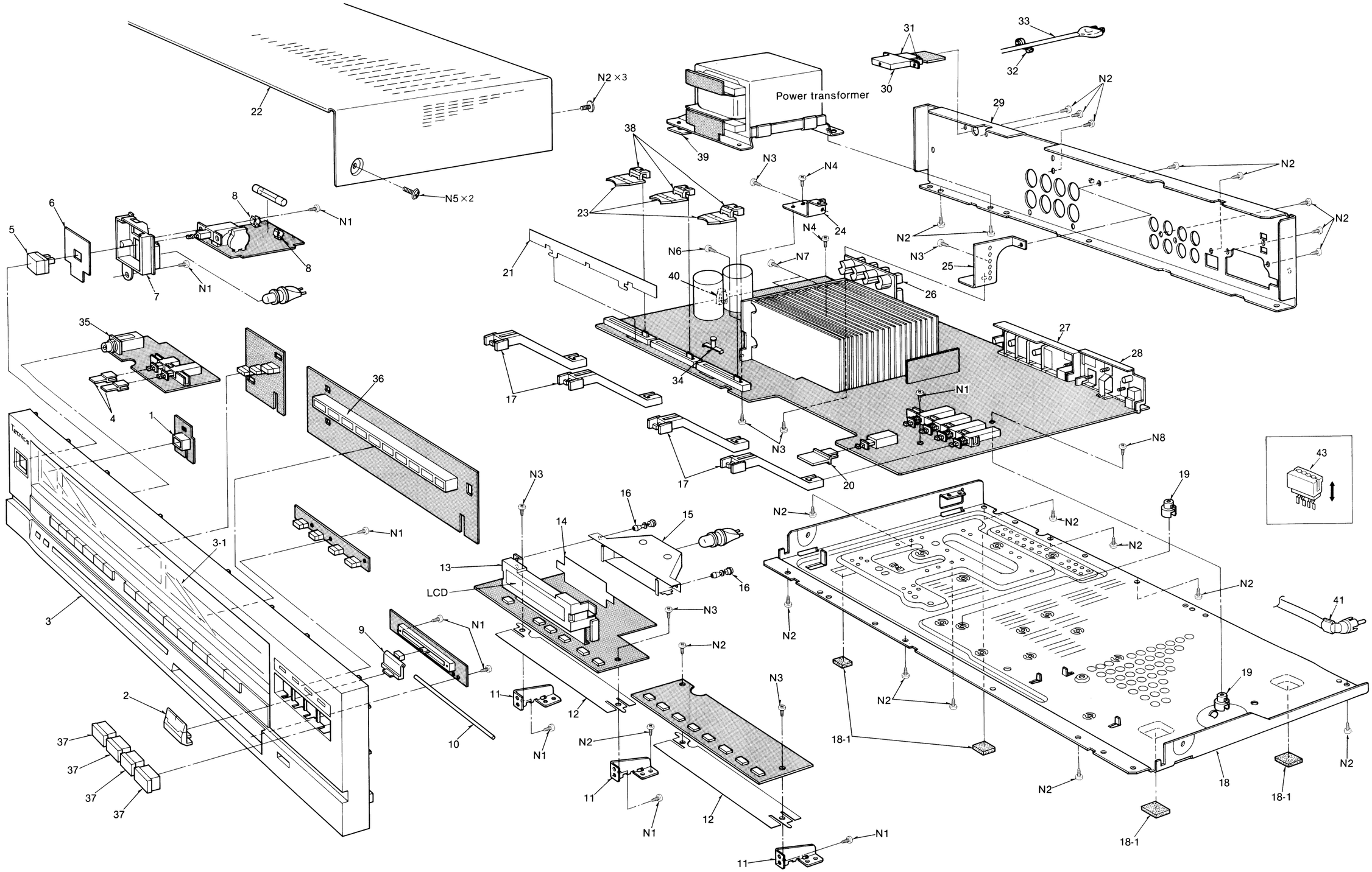
Notes:
- Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
- Important safety notice. Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- The parenthesized numbers in the column of description stand for the quantity per set.
- ○-marked parts are used for silver type only. Ⓚ-marked parts are used for black type only.
- Part other than ○- and Ⓚ-marked are used for both black and silver types.

Ref. No.		Part No.	Description	
CABINET and CHASSIS PARTS				
1		SWV66	LED Ass'y (D206)	(1)
2	○	SBDA290−SH	Volume Knob Ass'y	(1)
2	Ⓚ	SBDA290−KM	Volume Knob Ass'y	(1)
3	○	SGYA290−SH	Front Panel Ass'y	(1)
3	Ⓚ	SGYA290−KX	Front Panel Ass'y	(1)
3-1	○	SGU483V	Instruction Plate	(1)
3-1	Ⓚ	SGU483I	Instruction Plate	(1)
4	○	SBC571−T	Speaker Button	(2)
4	Ⓚ	SBC571−10T	Speaker Button	(2)
5	○	SBC666	Power Button	(1)
5	Ⓚ	SBC666−3	Power Button	(1)
6		SHG6380	Rubber	(1)
7		SGX7809	Lamp Holder Plate	(1)
8		SJT347	Fuse Holder	(2)
9		SHR9789	Volume Holder	(1)
10		SUX39	Shaft	(1)
11		SUW2974	Plate	(3)
12		SMC6395−1	Shield Plate	(2)
13		SHR9771−2	LCD Holder	(1)
14		SDU249−1	LCD Filter	(1)
15		SMP395−2	Lamp Case	(1)
16		SHR415	Nylon Pin	(2)
17		SUB251	Connection Rod	(4)
18		SKUA290−KG	Bottom Board Ass'y	(1)
18-1		SKL293	Foot	(4)
19		SHE185	P.C.B. Holder	(2)
20	○	SBC315−4T	Loudness Knob	(1)
20	Ⓚ	SBC315−7	Loudness Knob	(1)

Ref. No.		Part No.	Description	
CABINET and CHASSIS PARTS				
21	○	SHR5310−1	Tone Spacer	(1)
21	Ⓚ	SHR5310	Tone Spacer	(1)
22	○	SKCA290−SG	Cabinet Ass'y	(1)
22	Ⓚ	SKCA290−KG	Cabinet Ass'y	(1)
23	○	SBD97	Tone Selector Knob	(3)
23	Ⓚ	SBD97−3	Tone Selector Knob	(3)
24		SUW2975	Plate	(1)
25		SUW2928−2	Plate	(1)
26		SJF4818	Speaker Terminal	(1)
27		SJF3059−14N	Input Terminal	(1)
28		SJF4441−5	Antenna Terminal	(1)
29		SGP6708A	Rear Panel	(1)
30		SMC1200	Shield Plate	(1)
31		SMX891	Sheet	(2)
32		SHR127	Bushing, AC Cord	(1)
33		SFDAB31E01	AC Cord	(1)
34		SHR9748	P.C.B. Holder	(1)
35		SJJ126B	Headphone	(1)
36		SWV80	LED Ass'y (D551~560)	(1)
37	○	SBC718	Selector Button	(4)
37	Ⓚ	SBC718−1	Selector Button	(4)
38	○	SHR9764−6	Spacer	(3)
38	Ⓚ	SHR9764−7	Spacer	(3)
39		SHP669−1	Spacer	(1)
40		SHR9794	Speaker	(1)
41		SJE87−1	Cord, FM Antenna	(1)
43		SJT30543−V	Socket (5P)	(1)
43		SJT30743−V	Socket (7P)	(1)

Ref. No.		Part No.	Description	
SCREWS				
N1		XTB3+8G	Tapping, ⊕3×8	(9)
N2		XTBS3+8JFZ1	Tapping, ⊕3×8	(24)
N3		XTW3+8T	Tapping, ⊕3×8	(7)
N4		XTBS3+16F1	Tapping, ⊕3×16	(2)
N5	○	SNE2095−4	Cabinet	(2)
N5	Ⓚ	SNE2095−5	Cabinet	(2)
N6		SNE2117−1	Transistor	(1)
N7		SNE2118	Power IC	(2)
N8		XTBS3+8FFZ1	Tapping, ⊕3×8	(1)
ACCESSORIES				
A1		SQF12685	Instruction Book	(1)
A2		SSA270	FM Antenna	(1)
A3		SSA902−5	Loop Antenna	(1)
A4		SMA231	Holder	(1)
A5		SMA233−1	Holder	(1)
A6		XTN3+10AFZ	Screw, ⊕3×10	(1)
PACKING PARTS				
P1		SPP719	Polyethylene Bag	(1)
P2		SPS4432−3	Pad, Left Side	(1)
P3		SPS4433−3	Pad, Right Side	(1)
P4		SPS4670	Pad, Front	(1)
P5		SPS4693	Pad, Upper	(1)
P6		SPG5530	Carton Box	(1)
P7	○	SJK1414	Label (Silver Only)	(2)

■ EXPLODED VIEWS



■ REPLACEMENT PARTS LIST

Notes:
- Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
- Important safety notice. Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- The unit of resistance is OHM (Ω). K=1000Ω, M=1000kΩ
- The unit of capacitance is MICROFARAD (μF). P=10⁻⁶μF.

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value

Resistor Type	Wattage	Tolerance
ERD : Carbon	S2 : 1/4W S1 : 1/2W	J : ±5%

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value	Tolerance	Peculiarity

ECEA	50	M	R47	R
Type	Voltage	Peculiarity use	Value	Special use

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA : Electrolytic	0J : 6.3V	1H : 50V DC	C : ±0.25pF
ECCD : Ceramic	1A : 10V	1 : 125V DC	J : ±5%
ECKD : Ceramic	1C : 16V		K : ±10%
ECQM : Polyester	1E : 25V		Z : +80%, −20%
ECQP : Polypropylene	1H : 50V		
	25 : 25V		

● CAPACITORS

Ref. No.	Part No.	Value
C1, 2	ECEA1HU3R3	3.3
C3, 4	ECCD1H101K	100P
C5, 6	ECKD1H102KB	0.001
C7, 8	ECFTD223KXL	0.022
C9, 10	ECFTD682KXL	0.0068
C11, 12	ECEA1HU010	1
C13, 14	ECEA0JU330	33
C51, 52	ECCD1H180K	18P
C53, 54	ECKD1H221KB	220P
C61, 62	ECCD1H101K	100P
C65, 66	ECCD1H101K	100P
C119	ECKD1H103ZF	0.01
C122	ECKD1H223ZF	0.022
C151	ECCD1H330CC	33P
C152	ECKD1H103ZF	0.01
C201	ECQM1H473JZ	0.047
C202	ECCD1H120JCY	12P
C203	ECQP1471JZ	470P
C204	ECQP1391JZ	390P
C205	ECEA1HU3R3	3.3
C208	ECKD1H103ZF	0.01
C209	ECCD1H470K	47P
C211	ECKD1H223ZF	0.022
C212	ECCD1H080CC	8P
C213	ECCD1H470K	47P
C214	ECEA0JU101	100
C215	ECEA1HU4R7	4.7
C216	ECKD1H103ZF	0.01
C217	ECKD1H223ZF	0.022
C218	ECFTD183KXL	0.018
C219	ECEA1HU2R2	2.2
C220	ECEA1HU4R7	4.7
C222	ECEA1CU100	10
C223	ECEA1HU010	1
C224	ECKD1H103ZF	0.01
C225	ECEA1CU100	10
C226	ECKD1H101K	100P
C227	ECKD1H223ZF	0.022
C229	ECKD1H103ZF	0.01
C230	ECKD1H223ZF	0.022
C231	ECCD1H220K	22P
C232	ECEA1HU010	1
C241	ECCD1H101K	100P
C301	ECEA1CU101	100
C304, 305	ECEA1HU3R3	3.3
C306, 307	ECQM1H272JZ	0.0027
C310	ECQP1471JZ	470P
C311	ECEA1HU010	1
C312	ECFTD473KXL	0.047
C313	ECEA1HU3R3	3.3
C314	ECEA1HUR47	0.47
C315	ECKD1H103ZF	0.01
C331	ECEA1CU330	33
C333, 334	ECQM1H472JZ	0.0047
C407, 408	ECKD1H103ZF	0.01
C501, 502	ECCD1H101K	100P
C503, 504	ECEA1HU3R3	3.3
C505, 506	ECCD1H390K	39P
C507, 508	ECEA1EU100	10
C509, 510	ECCD1H680K	68P
C511	ECKD1H103ZF	0.01
C512	ECEA1CU330	33
C513, 514	ECFTD332KXL	0.0033
C515, 516	ECFTD333KXL	0.033
C517, 518	ECFTD183KXL	0.018
C519, 520	ECFTD104KXL	0.1
C521, 522	ECQE1104KN	0.1
C523, 524	ECKD1H331KB	330P
C551, 552	ECEA1HKSR22	0.22
C553, 554	ECEA1HKS2R2	2.2
C555, 556	ECFTD822KXL	0.0082
C601, 602	ECEA1HN4R7S	4.7
C603, 604	ECCD1H101K	100P
C605, 606	ECKD1H331KB	330P
C607, 608	ECEA1HU330	33
C609, 610	ECCD1H100KC	10P
C611, 612	ECEA1HN3R3S	3.3
C615	ECEA1HN100S	10
C617	ECEA1HU330	33
C618	ECEA1JU220	22
C619, 620	ECKD1H473ZF	0.047
C643	ECKD1H102ZF	0.001
C646, 647	ECKD1H221KB	220P
C651, 652	ECKD1H103ZF	0.01
C653, 654	ECKD1H103ZF	0.01
C661, 662	ECKD1H103ZF	0.01
C663, 664	ECKD1H103ZF	0.01
C701 ⚠	ECKDKC103PF2	0.01
C702	ECQE1105KZ	1
C703, 704	ECETS1HV822U	8200
C705	ECEA0JU470	47
C707	ECEA1HU470	47
C708	ECEA1VU4R7	4.7
C709	ECEA1VU470	47
C710	ECKD1H103ZF	0.01
C711	ECEA1AU101	100
C712, 713	ECKD1H103ZF	0.01
C714	ECKD1H103ZF	0.01
C715	ECEA1EU101	100
C716	ECEA1CU471	470
C718	ECEA0JU101	100
C901	ECEA25M4R7R	4.7
C902	ECKD1H103ZF	0.01
C906	ECCD1H470K	47P
C907	ECCD1H100KC	10P
C908	EECF5R5U473	0.47F
C910	ECEA0JU471	470
C913	ECKD1H103ZF	0.01
C914	ECCD1H150KC	15P
C915	ECEA1HU3R3	3.3
C916	ECEA1HU010	1
C918	ECCD1H121K	120P
C921	ECEA1CU221	220
C922	ECKD1H103ZF	0.01
C930	ECEA1HU010	1

● RESISTORS

Ref. No.	Part No.	Value
R1, 2	ERD10TLJ391U	390
R3, 4	ERD10TLJ224U	220K
R5, 6	ERO10MKG5622	56K
R7, 8	ERD10TLJ271U	270
R9, 10	ERD10TLJ680U	68
R11, 12	ERD10TLJ184U	180K
R13, 14	ERD10TLJ123U	12K
R15, 16	ERD10TLJ563U	56K
R17, 18	ERD10TLJ102U	1K
R51, 52	ERDS2TJ471	470
R61, 62	ERDS2TJ102	1K
R65, 66	ERDS2TJ102	1K
R121	ERDS2TJ562	5.6K
R131	ERDS2TJ151	150
R204	ERDS2TJ102	1K
R205	ERDS2TJ104	100K
R207	ERDS2TJ821	820
R208	ERDS2TJ563	56K
R209	ERDS2TJ182	1.8K
R210	ERDS2TJ121	120
R211	ERDS2TJ101	100
R212	ERDS2TJ561	560
R213	ERDS2TJ151	150
R214	ERDS2TJ471	470
R215	ERDS2TJ223	22K
R216	ERDS2TJ563	56K
R217	ERDS2TJ471	470
R218	ERDS2TJ822	8.2K
R219	ERDS2TJ104	100K
R220	ERDS2TJ153	15K
R221	ERDS2TJ122	1.2K
R223	ERDS2TJ473	47K
R224, 225	ERDS2TJ103	10K
R228	ERDS2TJ474	470K
R229	ERDS2TJ331	330
R230	ERDS2TJ824	820K
R231	ERDS2TJ471	470
R232, 233	ERDS2TJ273	27K
R234, 235	ERDS2TJ104	100K
R239	ERDS2TJ334	330K
R240	ERDS2TJ102	1K
R241	ERDS2TJ471	470
R242	ERDS2TJ123	12K
R243	ERDS2TJ222	2.2K
R248	ERDS2TJ471	470
R249	ERDS2TJ153	15K
R250	ERDS2TJ562	5.6K
R251	ERDS2TJ221	220
R252	ERDS2TJ104	100K
R261	ERDS1FJ104	100K
R262	ERDS2TJ103	10K
R263	ERDS2TJ123	12K
R301	ERDS2TJ221	220
R304, 305	ERDS2TJ223	22K
R307, 308	ERDS2TJ272	2.7K
R309, 310	ERDS2TJ562	5.6K
R313	ERDS2TJ153	15K
R314	ERDS2TJ123	12K
R315	ERDS2TJ102	1K
R317, 318	ERDS2TJ103	10K
R331, 332	ERDS2TJ822	8.2K
R333, 334	ERDS2TJ102	1K
R501, 502	ERDS2TJ474	470K
R503, 504	ERDS2TJ102	1K
R505, 506	ERDS2TJ474	470K
R507, 508	ERDS2TJ392	3.9K
R509, 510	ERDS2TJ821	820
R511, 512	ERDS2TJ223	22K
R513, 514	ERDS2TJ332	3.3K
R515, 516	ERDS2TJ393	39K
R517, 518	ERDS2TJ393	39K
R519, 520	ERDS2TJ222	2.2K
R521, 522	ERDS2TJ183	18K
R523	ERDS2TJ331	330
R551, 552	ERDS2TJ151	150
R553, 554	ERDS2TJ121	120
R555, 556	ERDS2TJ271	270
R557	ERDS2TJ821	820
R557A	ERDS2TJ272	2.7K
R558	ERDS2TJ681	680

Ref. No.	Part No.	Value
R558A	ERDS2TJ272	2.7K
R559, 560	ERDS2TJ104	100K
R561, 562	ERDS2TJ224	220K
R563, 564	ERDS2TJ333	33K
R565, 566	ERDS2TJ153	15K
R567, 568	ERDS2TJ472	4.7K
R569, 570	ERDS2TJ271	270
R601, 602	ERDS2TJ102	1K
R603, 604	ERDS2TJ223	22K
R609, 610	ERDS2TJ223	22K
R611, 612	ERDS2TJ821	820
R613, 614	ERDS2TJ682	6.8K
R615, 616	ERDS2TJ682	6.8K
R617, 618	ERDS2TJ104	100K
R623, 624	ERDS1FJ100	10
R625, 626	ERDS1FJ100	10
R627, 628 ⚠	ERDS1FJ331	330
R630 ⚠	ERD25FJ221	220
R633	ERDS2TJ153	15K
R634 ⚠	ERD25FJ151	150
R636 ⚠	ERD25FJ1R0	1
R671, 672	ERDS2TJ561	560
R701, 702	ERX1ANJR22	0.22
R703	ERD25FJ181	180
R704, 705	ERDS2TJ393	39K
R706	ERG2ANJ220	22
R707 ⚠	ERDS1FJ152	1.5K
R708	ERDS2TJ821	820
R709	ERDS2TJ102	1K
R710	ERDS2TJ272	2.7K
R711	ERDS2TJ222	2.2K
R712 ⚠	ERDS1FJ561	560
R713	ERDS2TJ221	220
R714 ⚠	ERD25FJ470	47
R715	ERDS2TJ223	22K
R716	ERG2ANJ471	470
R719, 720	ERDS2TJ124	120K
R721	ERDS2TJ153	15K
R722	ERDS2TJ473	47K
R725	ERDS1FJ681	680
R901	ERDS2TJ103	10K
R903	ERDS2TJ561	560
R906	ERDS2TJ332	3.3K
R907	ERDS2TJ473	47K
R908	ERDS2TJ103	10K
R909	ERDS2TJ562	5.6K
R910	ERDS2TJ681	680
R912	ERDS2TJ102	1K
R921	ERDS2TJ221	220
R922	ERDS2TJ101	100

INTEGRATED CIRCUITS

Ref. No.	Part No.	Description
IC1, 501	AN6558F	IC
IC201	AN7273A	IC
IC301	AN7470	IC
IC551, 552	AN6882	IC
IC601	SVI3001	IC, Power
IC701	AN7072N	IC
IC901	UPD1718G512	IC

TRANSISTORS

Ref. No.	Part No.	Description
Q205	2SC1685−QNC	Transistor
Q206	2SA1175FE	Transistor
Q207	2SC2785F	Transistor
Q208, 209	2SA1175FE	Transistor
Q210	2SC2785F	Transistor
Q211, 212	2SC2787L	Transistor
Q213, 214, 702	2SC2785F	Transistor
Q701	2SD12650	Transistor
Q703	2SC1384NC−R	Transistor
Q704	2SA992E	Transistor
Q705, 706	2SA1175FE	Transistor
Q707, 901, 902	2SC2785F	Transistor
Q905	2SA1175FE	Transistor

DIODES

Ref. No.	Part No.	Description
D201	KV1260Z	Diode
D202, 203	LN446YP−C	Diode
D204	LN846RP−C	Diode
D206	SLV31VC3	Diode
D207	1SS254	Diode
D209	MA4110M	Diode
D301, 303	1SS254	Diode
D511∼514	MA4062H	Diode
D551∼560	SLV31YT3M	Diode
D561∼563	LN846RP−C	Diode
D564	LN446YP−C	Diode
D565, 566	MA29WA	Diode
D567, 568	MA165	Diode
D701∼704 ⚠	SVDS3V40	Rectifier
D705, 707∼709	1SS254	Diode
D710 ⚠	SVDSR1K2	Rectifier
D711	MA4062M	Diode
D712	MA4160M	Diode
D713, 714	MA4120−M	Diode
D901	MA4110M	Diode
D902∼913	1SS254	Diode
D915, 916	MA162A	Diode
D920	1SS254	Diode

COILS

Ref. No.	Part No.	Description
L110	SLA4Z13−Z	Coil
L115	ELEPH1R2MA	Choke
L204	SLA2B1−1M	AM Antenna
L205	SLO2B7−M	AM OSC
L210, 211	ELEPH1R0MA	Choke
L301	SLM1B1−P	L.P.F.
L302, 303	SLM5B2−1P	L.P.F.
L601, 602	SLQY07G−40	Choke
L701, 702 ⚠	SLQX400−D	Choke
L901	RLQY25S5−0	Choke
L902	ELEPK1R2MA	Choke

TRANSFORMERS

Ref. No.	Part No.	Description
T201	SLI2B101−M	Transformer
T202	SLI4B511−Z	FM IFT
T203	SLI4B513−Z	FM IFT
T701 ⚠	SLT5M469	Power Transformer

CERAMIC FILTERS

Ref. No.	Part No.	Description
CF201, 202	SVFE107MS8−A	FM, 10.7MHz (Red)
	SVFE107MS8−D	FM, 10.65MHz (Black)
	SVFE107MS8−E	FM, 10.75MHz (White)
CF203	SVFSFZ450F7L	AM, 450kHz

CRYSTAL

Ref. No.	Part No.	Description
X901	SVQ49U452−T	Crystal 4.5MHz

VARIABLE RESISTORS

Ref. No.	Part No.	Description
VR301	QVNB3A00B472	Variable Resistor, 4.7kΩ
VR302	QVNB3A00B474	Variable Resistor, 470kΩ
VR501	EWAPBAX05B15	Variable Resistor, 100kΩ(B)
VR502	EWANF5X05G15	Variable Resistor, 100kΩ(G)
VR503, 504	EWANA6X05C15	Variable Resistor, 100kΩ(C)

VARIABLE CAPACITOR

Ref. No.	Part No.	Description
CT201	ECRHA010A41	Variable Capacitor

COMPORNENT COMBINATIONS

Ref. No.	Part No.	Description
Z301, 302	EXRP102K473T	0.001μF, 47kΩ

SWITCHES

Ref. No.	Part No.	Description
S501∼504	SSH498	Input Selector
S601, 602	SSH2120	Speaker Selector
S603	SSH1159	Loudness Selector
S604 ⚠	SSS164	Impedance Selector
S701 ⚠	SSH1071	Power Source
S901∼911, 913∼915	SSG13	Input Selector

FUSE

Ref. No.	Part No.	Description
F1 ⚠	XBA2C10TR0	250V, T1.0A

RELAY

Ref. No.	Part No.	Description
RL701	SSY129	Relay

LIQUID CRYSTAL DISPLAY

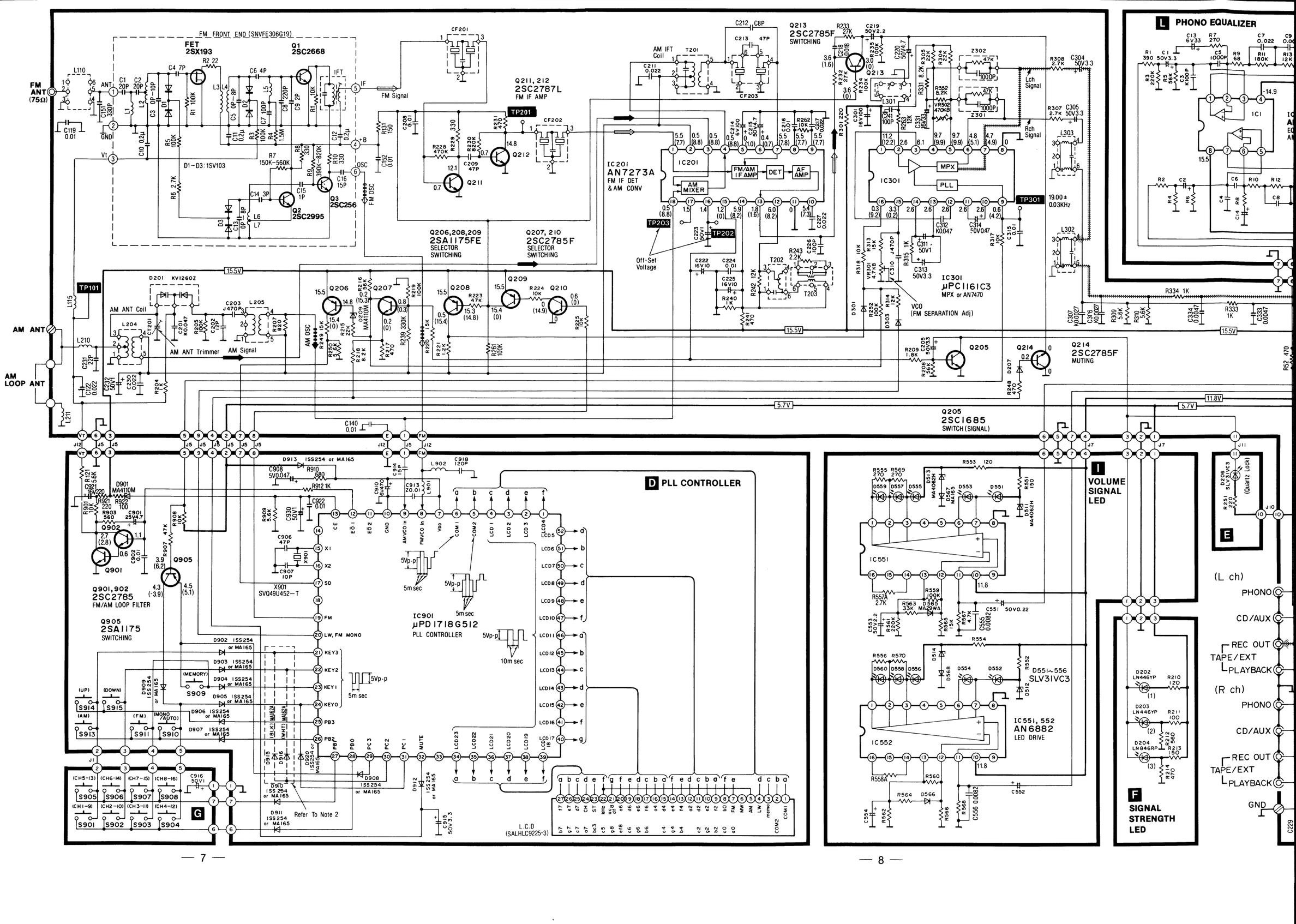
Ref. No.	Part No.	Description
LCD	SALHLC9225−3	Frequency Display

LAMPS

Ref. No.	Part No.	Description
PL1 ⚠	XAMR83S150A	Lamp
PL2 ⚠	XAMR78S150	Lamp

FM FRONT END

Ref. No.	Part No.	Description
	SNVFE306G19	FM Front End Pack


FM FRONT END (SNVFE306G19)
FET 2SX193
Q1 2SC2668
FM ANT (75Ω)
D1-D3: 1SV103
Q2 2SC2995
Q3 2SC256
Q211, 212 2SC2787L FM IF AMP
Q206,208,209 2SA1175FE SELECTOR SWITCHING
Q207, 210 2SC2785F SELECTOR SWITCHING
Q213 2SC2785F SWITCHING
IC201 AN7273A FM IF DET & AM CONV
IC301 μPC1161C3 MPX or AN7470
VCO (FM SEPARATION Adj)
Q214 2SC2785F MUTING
Q205 2SC1685 SWITCH (SIGNAL)
AM ANT
AM LOOP ANT
AM ANT Coil
AM ANT Trimmer
AM Signal
AM OSC
FM Signal
Off-Set Voltage
Lch Signal
Rch Signal
19.00± 0.03KHz
15.5V
11.8V
5.7V
D PLL CONTROLLER
IC901 μPD1718G512 PLL CONTROLLER
Q901,902 2SC2785 FM/AM LOOP FILTER
Q905 2SA1175 SWITCHING
X901 SV049U452-T
L.C.D (SALHLC9225-3)
Refer To Note 2
I VOLUME SIGNAL LED
IC551 IC552 AN6882 LED DRIVE
D551~556 SLV31VC3
E
F SIGNAL STRENGTH LED
L PHONO EQUALIZER
(L ch)
(R ch)
PHONO
CD/AUX
REC OUT
TAPE/EXT
PLAYBACK
GND

L PHONO EQUALIZER

IC1 AN6558F EQUALIZER AMP

D561~563 LN846RP
D564 LN446YP

IC201 AN7273A FM IF DET & AM CONV

IC301 μPC1161C3 MPX or AN7470

VCO (FM SEPARATION Adj)

Q213 2SC2785F SWITCHING

Q214 2SC2785F MUTING

Q205 2SC1685 SWITCH (SIGNAL)

Off-Set Voltage

19.00± 0.03KHz

Lch Signal

Rch Signal

S501 (Phone)

S502 (Tuner)

S503 (CD/Aux)

S504 (Tape Monitor)

IC501 AN6558F TONE CONTROL AMP

IC601 SVI3001 2H-POWER AMP

IC701 AN7072N MUTING & DETECTION

Q701 2SD12650 REGULATOR

Q702 2SC2785F REGULATOR

Q703 2SC1384NC REGULATOR

S603 (LOUDNESS)

S604 (IMPEDANCE)

VOLUME

PL2 LCD LAMP

PL1 FRONT PANEL LAMP

D PLL CONTROLLER

I VOLUME SIGNAL LED

IC551, 552 AN6882 LED DRIVE

D551~556 SLV31VC3

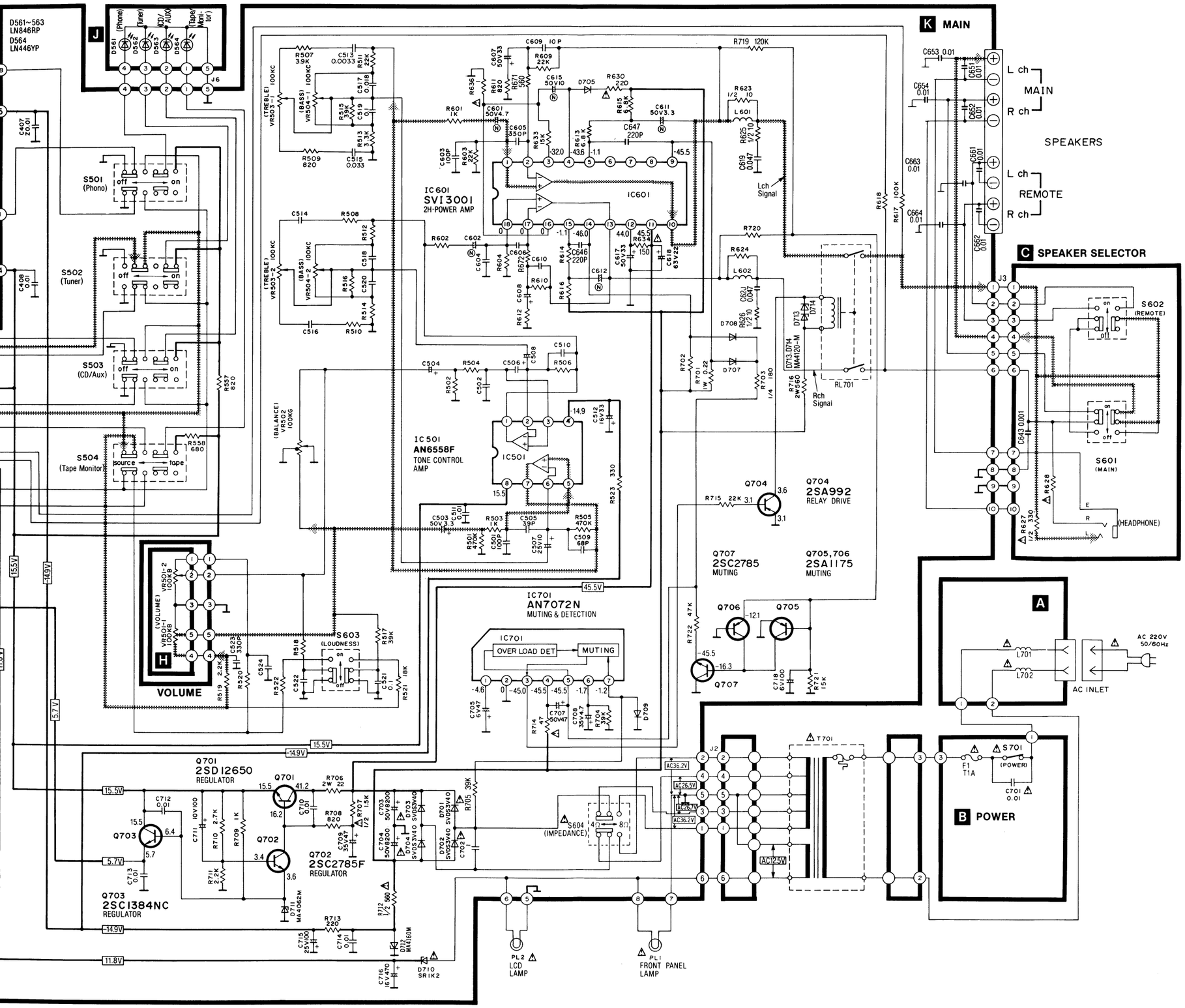
E

F SIGNAL STRENGTH LED

(L ch) PHONO / CD/AUX / REC OUT TAPE/EXT PLAYBACK

(R ch) PHONO / CD/AUX / REC OUT TAPE/EXT PLAYBACK

GND



■ SCHEMATIC DIAGRAM

Note 1:

1. **S501~S503** : Input selector switch in "**tuner**" position.
   [S501 —— phono S502 —— tuner
   L S503 —— CD/aux]
2. **S504** : Tape monitor selector switch in "**source**" position.
   (▂ tape/ext, ▉ source)
3. **S601** : Main speaker switch in "**on**" position.
   (▂ on, ▉ off)
4. **S602** : Remote speaker switch in "**off**" position.
   (▂ on, ▉ off)
5. **S603** : Loudness switch in "**off**" position.
   (▂ on, ▉ off)
6. **S604** : Speaker impedance switch in "**4~6Ω**" position.
   (4~6Ω ↔ 8~16Ω)
7. **S701** : Power switch in "**on**" position.
   (▂ on, ▉ off)
8. **S901~S908** : Preset tuning switch.
   [S901 —— CH1/CH9 S902 —— CH2/CH10
   S903 —— CH3/CH11 S904 —— CH4/CH12
   S905 —— CH5/CH13 S906 —— CH6/CH14
   L S907 —— CH7/CH15 S908 —— CH8/CH16]
9. **S909** : Memory switch in "**manual**" position.
   (manual —— auto)
10. **S910** : FM mode selector switch in "**mono**" position.
    (auto —— mono)
11. **S911, 913** : Band mode selector switch in "**FM**" position.
    (S911 —— FM, S913 —— AM)
12. **S914, 915** : Tuning switch.
    (S914 —— up, S915 —— down)
13. FM signal line ▬▶ AM signal line
    FM OSC ▭▶ AF signal line
    AM OSC ▬▶ Positive and negative voltage line
14. Important safety notice:
    Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
  All voltage values shown in circuitry are DC voltage in FM signal (Monaural signal) reception mode.
  Figures in ( ) stand for DC voltage in AM signal reception mode.

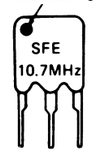
Part No.	Original Part No.	Supplyment Part No.
D915, D916	MA150	MA162A
D701~704	SVDS3V20	SVDS3V40

Note 2:

• Use of ceramic filters in pairs

The ceramic filters (CF201, CF202 and CF203) for FM-IF circuit are available in two ranks. For this machine, be sure to use the ceramics of the same rank in a pair.
At repairing and replacement, pay close attention to the diode (D915, D916) for use as different diodes must be used depending on each rank of the ceramic filters.

Color marking

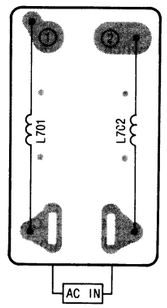


RANK (Color)	D915	D916	CENTER FREQUENCY
Red	X	X	10.70 MHz
White	X	○	10.75 MHz
Black	○	X	10.65 MHz

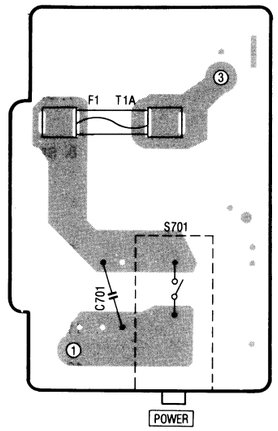
Note: ○ Mark Diode is used.
X Mark Diode is not used.

■ PRINTED CIRCUIT BOARDS

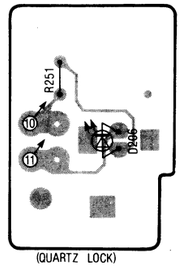
A



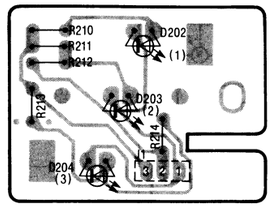
B POWER SWITCH P.C.B.



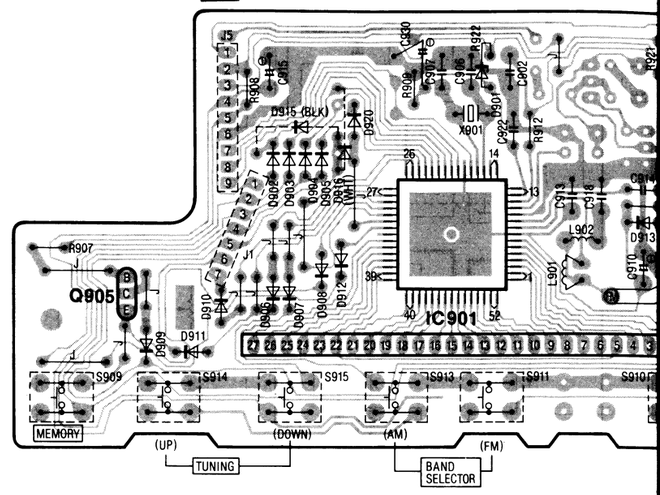
E QUARTZ LOCK LED P.C.B.



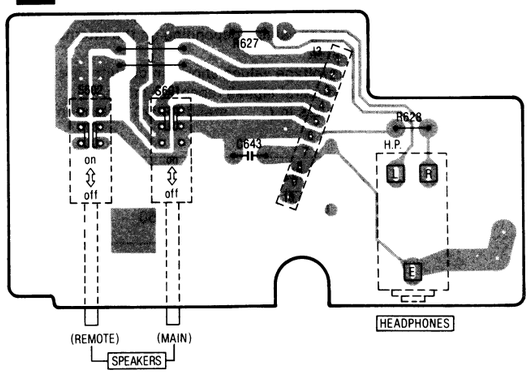
F SIGNAL STRENGTH LED P.C.B.

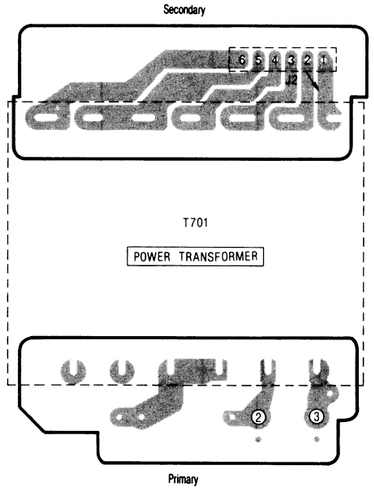


D PLL CONTROLLER P.C.B.

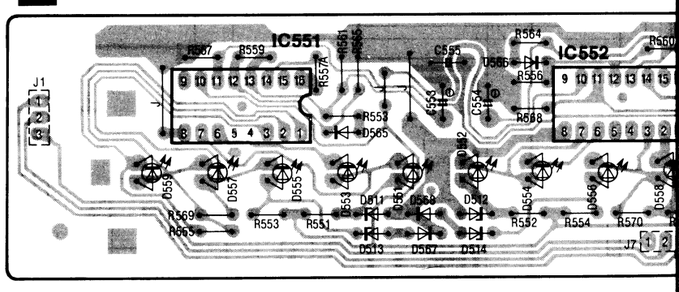


C SPEAKER SELECTOR P.C.B.

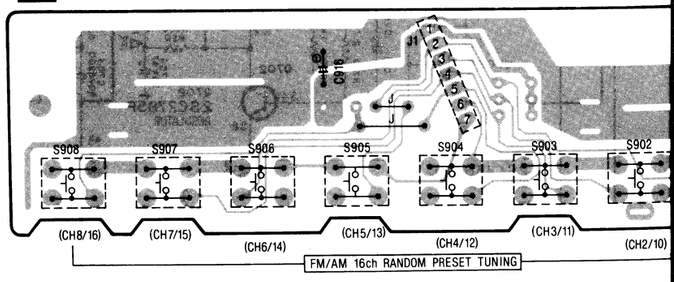




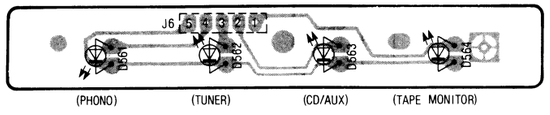
I VOLUME SIGNAL LED P.C.B.



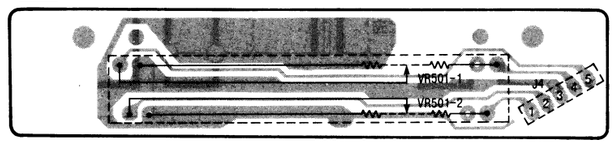
G KEY-MATRIX P.C.B.



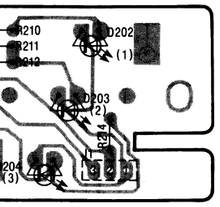
J INPUT SELECTOR LED P.C.B.



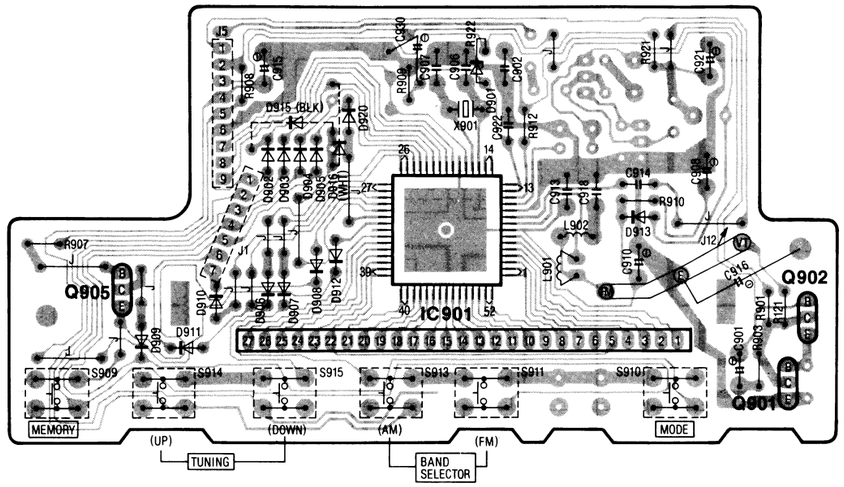
H VOLUME CONTROL P.C.B.



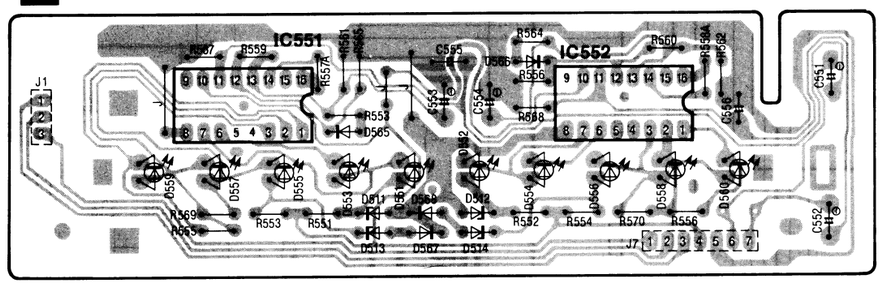
NAL STRENGTH LED P.C.B.



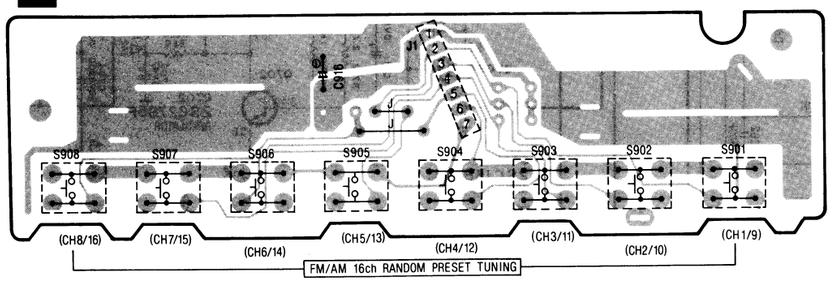
D PLL CONTROLLER P.C.B.



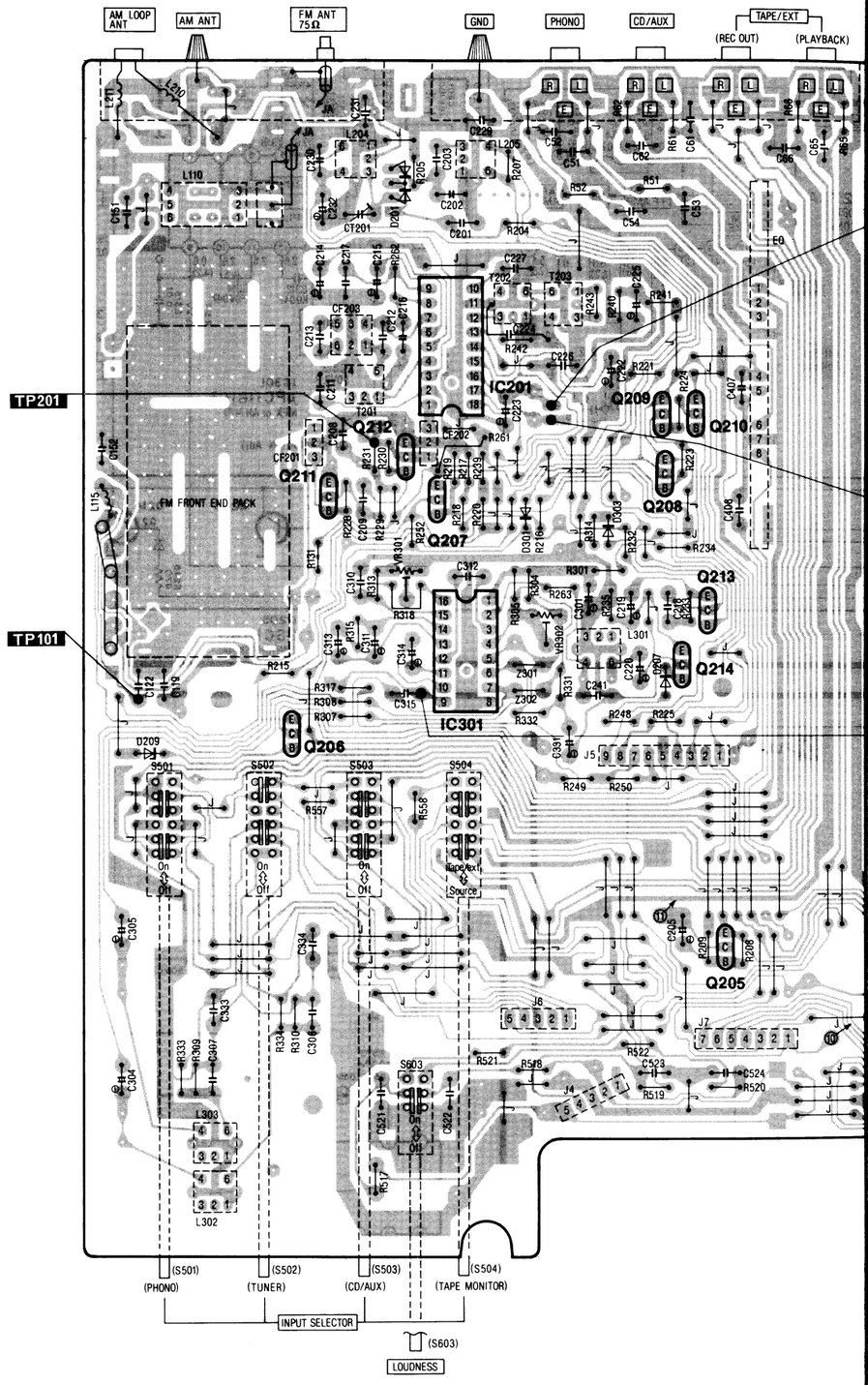
I VOLUME SIGNAL LED P.C.B.



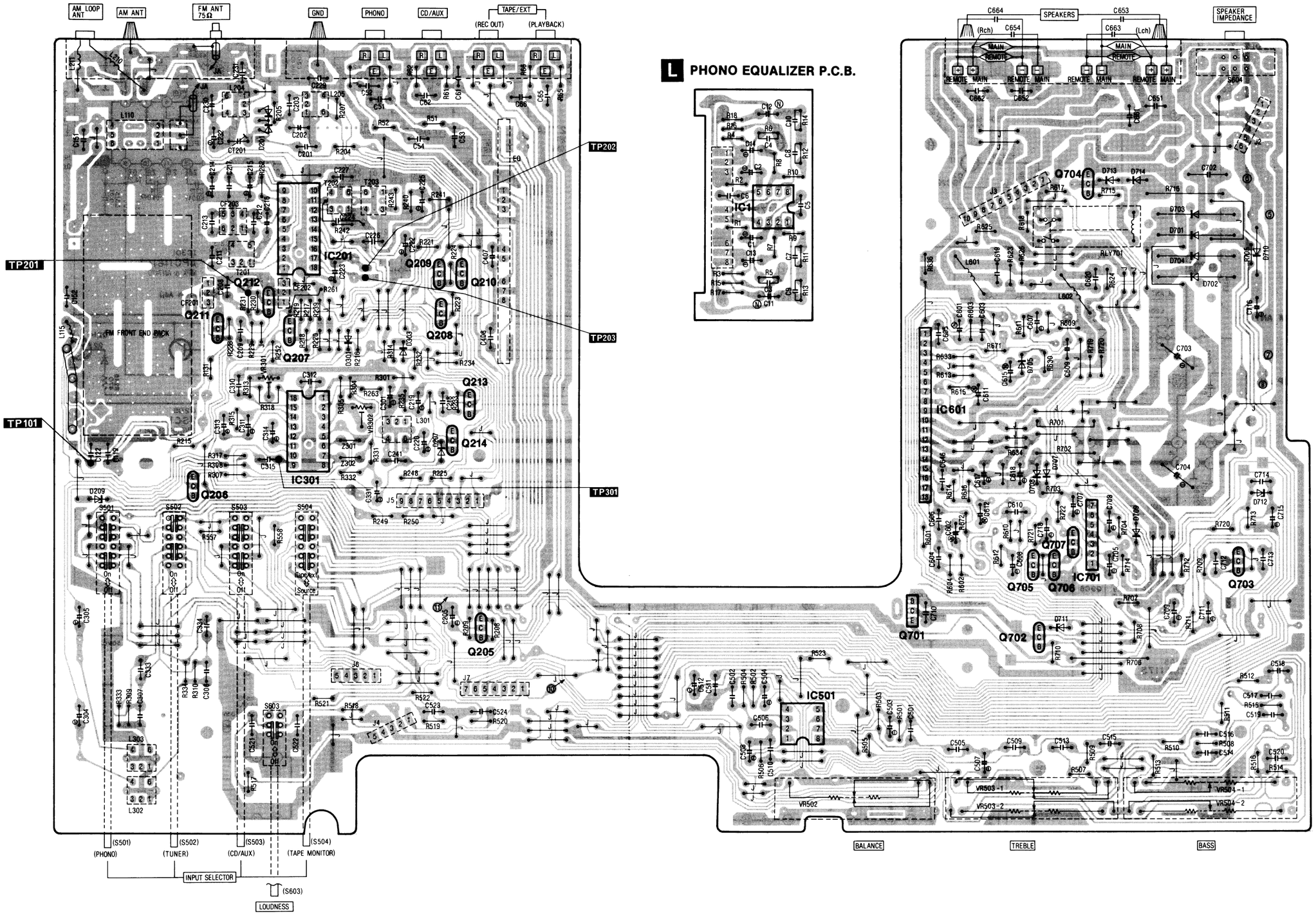
G KEY-MATRIX P.C.B.



K MAIN P.C.B.



K MAIN P.C.B.



L PHONO EQUALIZER P.C.B.

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860601300 Ⓗ A.K.